Life Balance and Well-Being: Testing a Novel Conceptual and Measurement Approach

Kennon M. Sheldon,[1] Robert Cummins,[2] and Shanmukh Kamble[3]
[1]University of Missouri-Columbia
[2]Deakin University
[3]Karnatak University

ABSTRACT Although a balanced life has always been viewed as desirable, there are problems with extant conceptualizations and measures of this construct. Here we introduce 2 new life-balance measures, based on time-use profiles, that address these problems. One defines life balance as objectively equitable time use across multiple life domains, and the other defines life balance as low subjective discrepancy between actual and ideal time-use profiles. Study 1 finds that both measures predict concurrent well-being, in both U.S. and Indian samples. Study 2 shows that fluctuations in balance predict fluctuations in well-being over a 3-week period. Study 3 replicates the Study 1 findings using a different time assessment technique, based on the Day Reconstruction Method. Study 4 assigns participants the month-long goal of enhancing their life balance, finding that those who achieve this goal enhance their well-being. In all 4 studies, the balance effects on well-being were mediated by psychological need satisfaction associated with balance.

Unbalanced lifestyles are endemic to Western culture. Modern people work longer hours than ever before, and the task of integrating work life with family life and child rearing is becoming ever more difficult, especially given the increasing percentage of dual-career couples. This phenomenon has been referred to as the "scarcity hypothesis" (Chapman, Ingersoll-Dayton, & Neal, 1994), in which the overallocation of time to work leaves less time and energy available for other domains, such as family. This can create stress and conflict that

Correspondence concerning this article should be addressed to Kennon M. Sheldon, 112 McAlester Hall, Psychological Sciences, University of Missouri, Columbia, MO 65211. Email: sheldonk@missouri.edu.

Journal of Personality 78:4, August 2010
© 2010, Copyright the Authors
Journal compilation © 2010, Wiley Periodicals, Inc.
DOI: 10.1111/j.1467-6494.2010.00644.x

produce a variety of negative consequences for health and well-being (Adams, King, & King, 1996; Grant-Vallone & Donaldson, 2001).

However, in this article we suggest that the concept of life balance should represent more than just "not working too hard." Indeed, the concept denotes more abstract ideals and prescriptions for optimal living, to be achieved by balancing competing choices and necessities across *all* of the many domains of life, not just work and family. This idea, that balance involves achieving some sort of virtuous integration or synthesis across the many parts of one's life, goes back to ancient times, found, for example, within Aristotle's conception of moderation and the golden mean, and also within Confucius' concept of the "middle way." Moreover, the topic has been receiving increasing attention in the present day: An informal search of titles (including dissertations) in PsychInfo for the term *life balance* for 1997–2007 revealed 1, 1, 3, 0, 3, 4, 3, 6, 16, 13, and 20 publications.

Unfortunately, most extant life-balance research seems compromised by inadequate conceptual discrimination, inadequate measurement, or both. As a result, it is not clear what life balance really means and how (if at all) it differs from related conceptions of the good life, such as eudemonia, meaning, and satisfaction. It is also unclear whether and how the construct, in the guise of its opposite, *im*balance, differs from conventional negatively tinged constructs such as stress, neuroticism, and role strain. Do we even need the theoretical construct of life balance, or does it simply denote, by a different name, phenomena that we already understand?

Below we first review some existing conceptions and measures of life balance, noting a variety of problems. To address these problems we then propose a two-pronged conceptual and measurement approach to life balance—one based on objectively equitable time use across multiple life domains, and the other based on the subjective correspondence (versus discrepancy) between actual time use and ideal time use.

Four studies are next presented to illustrate that both measures of life balance are associated with subjective well-being (SWB) concurrently, longitudinally, and cross-culturally. We also show that these associations are independent of participants' time use in particular life domains (e.g., work, sleep, or relationships), supporting our claim that life balance is an emergent property of people's lifestyles as a whole. These associations with SWB are also shown to be largely independent of neuroticism, supporting our claim that they represent more than simply a basic emotion-related dimension of personality.

Finally, the balance effects upon SWB are shown to be mediated by psychological need satisfaction, indicating that life balance works, in part, by helping people get the autonomy, competence, and relatedness experiences that they need in their daily lives.

Problems in Defining Life Balance

Life balance is typically defined by its opposite, *im*balance. This term usually refers to a stressful lifestyle, or more specifically, a lifestyle in which there is too much work and too little sociality. Often, the existence of imbalance within individuals' lives in Western nations is simply taken as a given—a societal, organizational, or cultural-level problem for which various programs, interventions, and policies need to be created (Backman, 2004).

However, few researchers have supplied explicit definitions of *positive* balance (i.e., what it means to be a well-balanced person; but see Greenhaus & Powell, 2006, for a discussion of work-family enrichment). Indeed, in their comprehensive review of the empirical research literature, Christiansen and Matuska (2006) noted that "although the concept of a balanced lifestyle seems implicitly understood, no consensus definition, model or measure has emerged to guide theory development" (p. 49). Similarly, in her conceptual review, Backman (2004) stated that life balance remains "an abstract and evolving construct" that is "seldom clearly and succinctly defined" (pp. 202–203).

Christiansen and Matuska (2006) proposed the following working definition of positive life balance, using the term *occupations* in the context of occupational therapy: "a consistent pattern of occupations that results in reduced stress and improved health and well-being" (p. 50). Note that here, balance is defined primarily in terms of its purported effects, upon both positive constructs (enhanced health, well-being) and negative constructs (reduced stress, strain). But this raises the question: Is life balance just another term for meaning, satisfaction, or a stress-free existence, a term that conveys nothing additional to these terms? We might call this the *no new information* problem.

Defining balance in terms of its effects is also problematic for other reasons. How do we know people are balanced? Because they are healthy. How do we know they are healthy? Because they are balanced. We might call this the *circularity* problem. Indeed, the circularity problem is even more directly evident in some definitions reviewed by Backman (2004): that balance refers to "the relative balance across . . . areas of self care, productivity, and leisure" (Law, Polatajko, Baptiste, & Townsend, 1997, p. 38) or to "balance among self care, work/productive activities, play or leisure, and rest" (Nurit & Michal, 2003, p. 228). Here, *balance* is defined as balance.

To illustrate further definitional issues, consider that Christiansen and Matuska (2006) organized their empirical review of the literature around four overarching perspectives upon balance: that balance involves (a) using time optimally, (b) successfully performing multiple social roles, (c) having a lifestyle that meets one's psychological needs, and (d) being synchronized with one's own biological rhythms. However, we suggest that the second, third, and fourth definitions are all compromised by the "no new information" problem. We already have a literature on role conflict, role strain, and role performance, a literature that (arguably) does not need the balance concept. Similarly, we already have literatures on psychological need satisfaction and biological synchronization, literatures that may also have no need for balance concepts.

What about the first definition, involving optimal time use? Although there is a substantial literature on time use, most of this research has merely catalogued and categorized time, without attempting to extract higher-order balance measures from the data. Also, this research has focused mostly on work time versus nonwork time, without discriminating between different kinds of nonwork time (Tenbrunsel, Brett, Maoz, Stroh, & Reilly, 1995). Thus, we suggest that this research has not fully exploited the theoretical possibilities of time-use methodologies, making such methodologies a good target of new research. Indeed, time is the very "stuff" of our lives—the raw material that we fill via our daily choices (Csikszentmihalyi, 1988). An inability to properly apportion this essential stuff across the different days and domains of our existences may be precisely indicative of an imbalanced life, if we can properly quantify such malapportionment.

Problems With Time-Use Approaches

However, there are problems with time-use methodologies. First, it is not always clear what categories to use when asking people to describe their time use. Should they divide their time by role categories (e.g., worker, parent, child), by goal categories (e.g., relationship, financial, community), by functional categories (e.g., work, chores, recreation), by physical location categories (e.g., home, work, car, health club), or by categories of their own unique devising? Perhaps these are mere empirical questions. More problematically, time-use studies often yield weak or inconsistent results (Christiansen & Matuska, 2006), limiting the appeal of this methodology. Perhaps time use itself is not a psychologically meaningful enough focus of study?

Indeed, Backman (2004) pointed out that time-use methodologies typically do not address how people *feel* about the way they use their time. For example, cooking may have a very different meaning as a work occupation than as a household chore, and shopping may have a very different meaning as a burden versus as a source of recreation. Thus, simply counting hours may be an ‘‘overly simplistic’’ (Spencer, 1989) approach to the complex issues of harmony and overall systemic functioning that are implied by the life-balance construct. We suggest that the psychological meaning problem is the most difficult one for time-use approaches to surmount. Who is to say that one person’s 6 hours of work represents greater balance than another person’s 10 hours, or that one person’s 8 hours of sleep represents greater balance than another person’s 5?

One way to incorporate meaning is to rely on people’s subjective evaluations of various time-use domains. For example, Backman (2001) measured balance by asking participants to rate how satisfied they were with the time spent on work, self-care, leisure, and rest, and Warren (2004) defined balance in terms of satisfaction ratings regarding eight different life domains, including leisure time, social life, job, health, and spouse/partner.

Unfortunately, a focus upon rated satisfaction within various life domains is problematic because we already have multiple domain measures of life satisfaction (Cummins, 2005). Perhaps the measures of Backman (2001) and Warren (2004) supply no new information beyond these existing measures? Also, defining balance as satisfaction may lead to the circularity (or method variance) problem, in which the predictor (life balance) and the outcome (feelings of happiness and satisfaction) are measured or conceptualized in the same way. Finally, satisfaction-based balance measures may be confounded with more general personality dispositions such as neuroticism or extraversion. A dispositionally unhappy person might score high on imbalance not because his or her time is out of balance but rather because everything looks bad to him or her (Fortunato & Goldblatt, 2002). If this is the case, then the "no new information" problem may arise again.

Thus the key, it seems, is to define life balance in a way that allows the construct to stand on its own, as something more than mere positivity or negativity, in a way that has not already been studied by another name. Insisting upon such discriminative validity should help the overall goals of psychological science, in which terminological redundancy and conceptual overlap remain large problems (Staats, 1999). A second key to defining life balance, it seems, is to incorporate meaning and satisfaction into the definition so that the participants' subjective construal of their time spent can be addressed—but not in such a way that the balance construct is reducible to existing meaning and satisfaction constructs. Our proposed approach to these two goals are considered below.

Proposed Definition and Measure of Life Balance

In accordance with the above reasoning, we propose a two-pronged definition of optimal life balance: that it exists when there is a numerically equitable distribution of time across one's actual time-use profile, and when that actual time-use profile is psychologically congruent with one's ideal time-use profile. In this bifold definition, to be a balanced person is to spread one's time out fairly evenly across the major domains of life while also feeling that one's time-use profile accords with one's ideal profile. In these studies we endeavored to measure each facet of balance separately, by examining both the objective distribution of time across different life categories and the subjective discrepancy between this distribution and the person's ideal distribution across those categories. We also examine the association of the subjective and objective balance measures, as well as their relative efficacy in predicting SWB.

It is important to note that these concepts of balance refer to emergent or system-level states of organization existing among multiple elements, states whose effects should represent more than the mere sum of their constituent elements taken singly. To ensure this, we statistically control for the simple effects of the various components of the balance measures (i.e., the hours apportioned to each of the measured life domains) when testing the effects of the two systemic life-balance measures. In this way, the effects of too much work or too little recreation, for example, might be examined and shown not to account for the effects of the more complex constructs. We reasoned that if our new balance measures lose their effects when their constituents are controlled, then those measures may yet suffer from the "no new information" problem. More information on our measurement approach will be provided in Study 1.

We take several approaches to validating the new measures of balance. First, in all four studies, we use the measures to predict SWB, supposing that a more balanced person should be a happier person. Using SWB as a criterion variable is a reasonable way to affirm hypotheses concerning the salubrious effects of purported positive constructs, at both personal and societal levels (Diener, 1994). Second, we examine whether balance effects can be accounted for by (low) neuroticism. Are the measures just surrogates for temperament and general disposition? We expected that this would not be the case because anybody can develop an unbalanced lifestyle, not just neurotic people. Third, in all four studies we examine whether psychological need satisfaction mediates the link between balance and SWB. In line with the third feature identified by Christiansen and Matuska (2006; discussed above) in their analysis of positive life balance, it seems that balanced people should be more successful at fulfilling their basic psychological needs, perhaps accounting for balance's effects upon SWB. We use self-determination theory's postulated autonomy, competence, and relatedness needs to test this hypothesis (Deci & Ryan, 2000). Our reasoning is that, to use our time well, we must provide ourselves with at least some opportunities to do *well* at activities that we really *want* to do (competence and autonomy, respectively), and also opportunities to *connect* with important others (relatedness). In contrast, when we are forced to allocate our time in an unbalanced way, we are likely to feel overly pressured and controlled by circumstances (lack of autonomy), to feel that we do not have the time we need to function effectively (lack of competence), and to feel that we do not have the time we need to connect with others (lack of relatedness).

Why focus on psychological need satisfaction as the mediator of balance effects, rather than other possible mediators such as low stress, low burnout, or low conflict? We believe it is important to identify positive mediators of a purportedly positive construct's effects because the absence of a negative is not the same as the presence of a positive (Sheldon & Gunz, 2009). Sheldon (2004) suggested that, as one such mediator, psychological need satisfaction constructs can be used to explain the positive SWB effects of many types of contextual and personality factors because psychological needs are said to be universal (Deci & Ryan, 2000) and to exist as species-typical requirements for thriving ''underneath'' the many individual differences that people display (Sheldon, 2004), as well as the many situations they encounter.

As additional validation attempts, in Study 1 we test whether balance effects generalize to a collectivist as well as an individualist cultural context (Triandis, 1995), as would be expected given our assumption that needs are universal and that balance universally enhances need satisfaction (i.e., no sample × balance interaction effects). In Study 2 we test whether the balance measures uniquely predict time stress but not other forms of stress, as would be expected if the new balance measures specifically reflect the quality of people's time apportionment. In Study 3 we test whether the balance measure effects emerge when a different time-use assessment methodology is employed, as would be expected if the construct is valid and robust. In Study 4 we examine whether achieving the goal of becoming more balanced over a month-long period predicts positive changes in our measures of life balance over that period and whether these changes, in turn, predict changes in SWB.

STUDY 1

Method

Participants and Procedure

In Study 1 we created two new measures of life balance and tested them as predictors of subjective well-being (SWB) in a U.S. student sample and an Indian student sample ($N = 350$). The U.S. sample comprised 196 introductory psychology students at the University of Missouri, 67 men and 129 women, who participated as part of a course requirement. The Indian sample comprised 154 students in a business psychology class at the Karnataka University in Dharwad, of Karnataka state, 74 men and 80 women, who volunteered for the study. All surveys were given in English, with the U.S. sample completing the measures in an online format and the Indian sample completing the measures in a paper-and-pencil format. Both samples completed a measure of neuroticism, as well as a measure of current autonomy, competence, and relatedness psychological need satisfaction (Deci & Ryan, 2000), which we examined as possible mediators of balance effects.

Measures

Life balance measures. We presented participants with 10 major time categories and asked them to apportion the 24 hours of their average day across those categories, the only constraint being that the numbers should sum to 24. We chose to assess the ‘‘average’’ day because we believed such data would better represent the participant’s lifestyle in general than would data derived by assessing some particular day (e.g., yesterday). The 10 categories were derived from interviews with undergraduate research assistants and included time spent sleeping, working, commuting, going to school, doing chores, and recreating, and also the categories of health/self-maintenance, community, personal relationships, and spirituality/religion (see the appendix for a typical assessment sheet). Of course, other categories and categorization systems might be adopted, but we thought this a reasonable initial set.[1] An example time-use profile is 1 hour in health/self-maintenance (eating, showering), 1 hour commuting (back and forth from a house located outside of town), 6 hours in school, 3 hours working (work-study student), 1 hour in community (attended a Spanish Club meeting), 1 hour in recreation (racquetball at the gym), 2 hours doing chores (cooking/cleaning), 2 hours in relationships (hanging out with friends before bed), and 7 hours sleeping. After describing their actual time use, participants were asked to apportion the 24 hours again, this time considering their *ideal* time apportionment—that is, how much time they would *like* to spend sleeping, working, on personal relationships, and so on. This allowed participants to adjust the amounts to their liking, envisioning what a more fulfilling time-use profile would be, from their own perspective. Both the actual and ideal measures are ipsative (constrained) measures, in that the separate time judgments are somewhat dependent on each other.

Our first candidate balance measure, called *objective balance*, was operationally defined as the within-subject standard deviation across the actual hour estimates, excluding sleep.[2] The more evenly distributed the

---

[1] The Indian group was allowed to write in an ‘‘other’’ category in addition to these domains; the U.S. group was not provided with an ‘‘other’’ category. The U.S. group was provided with a ‘‘relationships’’ category, and the Indian group was not. Thus, many of the Indian participants’ ‘‘other’’ category entries concerned interpersonal experiences.

[2] We excluded sleep time from our measures and hypothesis tests because although it is one of the largest categories of time use, it does not represent waking activity, and it is also relatively constant across participants, with a mean around 7 hours and a $SD < 1.5$ hours. Notably, results are essentially the same across the four studies when sleep time is either included in the balance measures or included as a control variable in the hypothesis tests.

24 hours are across these categories (i.e., the lower the standard deviation), the more balanced the person is considered to be (in our hypothesis tests we reversed this measure, so that a higher score indicates greater balance). This measure fits the intuitions of many life-balance researchers, that modern people are forced to spend too much time in just a few life domains at the expense of being able to spend time in many important life domains. This definition also captures the notion that a balanced life is one of both moderation and diversity, in which one's eggs are distributed into many baskets, not just one or two (Linville, 1985). It is possible that this measure would not be as salubrious at the high end of the distribution, as it implies a person who perhaps overrigidly spends almost exactly the same amount of time in every life domain. To explore this possibility we test for curvilinear effects involving this first balance measure.

But what about a person whose time is evenly distributed across categories but who wants to have a more *un*even distribution? One example is somebody who sleeps only 5 hours a night and would like to sleep 8 hours. Another example is a person who would like to work full time but has succeeded only in finding a part-time job. More generally, how can we take account of the subjective meaning of the time spent? To address this issue, as our second candidate measure, we took the absolute values of the nine discrepancy scores excluding sleep (i.e., the absolute value of ideal school hours minus actual school hours, ideal recreation hours minus actual recreation hours, and so forth) and summed them, deriving a single global discrepancy measure representing the extent to which the person would rearrange his or her time-use profile, given the opportunity, versus accepting it as it is. For our hypothesis tests we also reverse this measure, so high scores indicate greater balance (termed *subjective balance*). Notably, some previous balance researchers have employed a discrepancy assessment technique. For example, Jacobs and Gerson (2001) used an actual/ideal work-hours discrepancy approach, finding that on average, participants work more than their ideal number of work hours. However, they did not consider other domains besides work and did not treat the measure as a predictor variable to be correlated with presumed outcome variables.

Other measures. To assess SWB, we administered the positive affect/negative affect schedule (PANAS; Watson, Tellegen, & Clark, 1988), asking participants to rate "how you feel right now in your life." Because these two mood measures formed a single factor in both samples (with negative affect loading negatively), we created a composite positive affect balance measure by subtracting negative affect from positive affect (Diener, 1994; Sheldon & Elliot, 1999), which we refer to as SWB below (coefficient alpha after recoding = .79). For the readers' information, similar effects as those reported below were found for the separate measures, although the effects were not always significant. For economy, and also because no discriminative pattern emerged, we do not report these separate results.

To assess psychological need satisfaction, we administered an 18-item measure of autonomy, competence, and relatedness need satisfaction, with reference to the last week (Sheldon & Gunz, 2009). The measure combines items both from the Basic Psychological Needs Scale (Deci et al., 2001) and Sheldon, Elliot, Kim, and Kasser's (2001) studies of "most satisfying events." The primary innovation of this new 18-item scale is that it includes positively and negatively keyed items equally in the mix, so both the presence and absence of satisfaction are represented. Example positive and negative relatedness items are "I felt close and connected with other people who are important to me" and "I felt unappreciated by one or more important people." Example positive and negative competence items are "I was successfully completing difficult tasks and projects" and "I struggled doing something I should be good at." Example positive and negative autonomy items are "My choices were based on my true interests and values" and "I had a lot of pressures I could do without." Notably, examining the three need satisfaction variables separately across the studies did not yield a consistent distinctive pattern, likely because of the high intercorrelation among the three needs (*r*s between .49 and .72 across the three studies). Thus, we created a single aggregate measure of need satisfaction in Study 1 and the other studies by averaging the 18 items after appropriate recoding (coefficient alpha = .83).

To assess neuroticism, we administered the two-item neuroticism subscale from the Ten Item Personality Inventory (TIPI; Gosling, Rentfrow, & Swann, 2003), asking to what extent the items "apply to you in general." The two neuroticism items are "anxious, easily upset" and "calm, emotionally stable" (reversed; coefficient alpha = .65). Notably, then, we assessed neuroticism as a dispositional trait variable and SWB as a momentary state variable. This allowed us to examine whether our predictors' effects upon state SWB are independent of trait neuroticism, an important task for researchers introducing new SWB-related personality constructs.

Results

Preliminary Analyses

Table 1 contains the mean number of hours apportioned to each category, in terms of both the actual and the ideal apportionments, split by sample. As can be seen, means were fairly similar in the two samples; we do not report sample (United States vs. India) mean-level comparisons because of the slightly different category set used in the two samples. However, it is instructive to compare the actual and ideal time amounts *within* each sample. *T* tests revealed that the

Table 1
Study 1: Mean Actual and Ideal Hour Apportionments, Split by Sample

	Actual Time		*Ideal Time*	
	U.S.	India	U.S.	India
Sleep time	7.05	7.26	7.92	6.11
School time	5.33	6.60	4.53	6.70
Work time	.79	.61	1.11	.97
Recreation time	2.51	1.64	2.13	1.60
Group time	1.22	1.11	1.38	1.12
Relationship time	2.96	—	3.39	—
Health time	1.97	1.09	1.89	1.32
Chore time	.92	1.27	.51	1.25
Commuting time	.87	1.13	.49	1.10
Spirituality time	.38	.45	.66	.87
Other time	—	1.29	—	1.51

U.S. sample ideally wanted to spend less time working, commuting, doing chores, and engaging in recreation. They wanted to spend more time sleeping and more time engaged in group, relationship, and spiritual activities. The Indian sample wanted less sleep time, not more, and wanted more health and spirituality time, with no reduction in desired working time. There were no gender differences on these or any other variables in the study, so gender will be ignored.

We next considered zero-order correlations among the variables, using the combined sample. The "time spent in domain X" variables tended to be negatively correlated with one another (i.e., more sleep = less work), as might be expected given the ipsative measurement strategy in which more for one (e.g., sleeping) means less for the others (e.g., working, communing); these correlations are not tabled. Table 2 presents the correlations of SWB, need satisfaction, and the two balance measures. As can be seen, SWB and need satisfaction were highly correlated, echoing past findings; the two balance measures were positively correlated with one another, suggesting that they may converge on an underlying state of balance; and the two balance measures were both associated with SWB and need satisfaction, as would be expected given our hypotheses. In a further preliminary analysis, the "time spent" variables were

Table 2
Study 1: Associations Between Balance Measures, Need Satisfaction, and SWB

	Subjective Balance	Objective Balance	Need Satisfaction	SWB
Subjective balance	1.0			
Objective balance	.18	1.0		
Need satisfaction	.17	.27	1.0	
SWB	.21	.32	.77	1.0

Note. All ps $< .01$.

largely uncorrelated with the subjective balance measure. However, they tended to be positively correlated with the objective balance measure, with one exception; time spent in school correlated strongly negatively with objective balance ($r = -.70$, $p < .01$), such that the more time spent in school, the less objective balance. Of course, this association is controlled in our hypothesis tests below so that the objective balance measure's effects could be examined independently of the effects of time spent in school.

Hypothesis Tests

Recall our hypothesis that the two balance measures would be associated with SWB, independently of the specific constituents of the measures. To formally test this hypothesis, we conducted two different regression analyses on the full sample, one in which SWB was predicted by objective balance and one in which SWB was predicted by subjective balance. Each of these analyses included a dummy variable representing sample and also incorporated eight control variables representing the actual time spent in each category (excepting the spiritual time category because almost all participants put "0," and also the sleep time category, for reasons discussed in footnote 2). Thus, the effects of the balance measures could be examined independently of their constituents.

In the first analysis, objective balance was significant ($\beta = .25$, $p < .05$) as hypothesized, and none of the eight specific time-use variables was significant (i.e., the amount of time spent recreating, working, commuting, etc., was not associated with SWB). In the second analysis, subjective balance was also significant ($\beta = .19$, $p < .01$) as hypothesized; again, none of the specific time-use variables was significant. As an additional step in each analysis, we tested for moderator effects involving sample (United States vs. India); no significant effects emerged, indicating that the two balance measures have equivalent effects in the two samples and that combining the two samples is justified. In a third, exploratory analysis we included both life-balance measures in the same equation. In this analysis, subjective balance was significant and objective balance was not (βs = .17 and .12, *p*s = .002 and .29, respectively). Thus, in these data the subjective balance measure shared the most unique variance with SWB.

Supplementary analyses revealed no significant curvilinear effects of either balance measure upon SWB. Thus, a more balanced apportionment of time did not become less beneficial at the high end of the distribution nor become more beneficial at the low end of the distribution. Furthermore, there were no significant interactive effects of the objective and subjective balance measures. Thus, participants did not evidence synergistically higher SWB when they reported both an equitable time distribution and a congruent actual/ideal time distribution.

Considering Neuroticism

Are the balance measures mere surrogates for neuroticism? If so, the new measures may yet suffer from the "no new information" problem. Correlational analyses indicated that neuroticism was associated with SWB as expected ($r = -.66$, $p < .01$) and also with objective balance ($r = -.27$, $p < .01$) but was unrelated to subjective balance ($r = -.02$, *ns*). When we included neuroticism in the equation predicting SWB from objective balance, the objective balance coefficient was reduced from .21 to .13 (the neuroticism coefficient was $\beta = -.61$). However, a Sobel test (Sobel, 1982) indicated that the objective balance coefficient was not significantly reduced by including neuroticism in the equation ($z = 1.26$, $p > .05$), indicating that neuroticism does not account for the effects of objective balance.

Mediation by Need Satisfaction

Next, we examined whether psychological need satisfaction might mediate the balance-to-SWB relationships. To do this we reconducted the first two regressions described above, entering the aggregate need satisfaction variable at the last step instead of neuroticism. In the objective balance analysis, the balance coefficient was reduced from .21 to $-.06$ at this step, indicating significant mediation according to the Sobel (1982) test ($z = 5.02$, $p < .001$). In the subjective balance analysis, the balance coefficient was reduced from .18 to .08 at this step, also indicating significant mediation ($z = 2.91$, $p < .01$). Need satisfaction was a significant predictor in both analyses (both ps $< .001$), and the effect of need satisfaction on SWB did not vary by sample ($p > .40$ for the sample × need satisfaction interaction). Finding equivalent effects of need satisfaction on SWB in both cultural samples supports self-determination theory's claim that psychological needs are universally important (Deci & Ryan, 2000).

Brief Discussion

Study 1 provided preliminary support for our new constructs and measures of life balance. The subjective and objective balance variables were associated with each other and were both associated with greater SWB. The SWB associations were found while controlling for people's specific pattern of time use, ensuring that they represent more than the influence of time spent on particular life domains such as work, relationships, or recreation. The balance measures were not reducible to trait neuroticism, indicating that the new balance measures represent more than global negative affectivity. Thus, the data support our conjecture that these two measures capture emergent and potentially important properties of participants' life systems or lifestyles as a whole.

The data also suggest a mechanism by which balance has positive effects—via its positive associations with psychological need satisfaction (Christiansen & Matuska, 2006). Participants who more equitably apportioned their time across the provided domains, and whose actual apportionment accorded with their ideal apportionment, tend to feel greater autonomy, competence, and relatedness in their lives, partially or fully accounting for the associations of balance with SWB. This is consistent with Sheldon's (2004) claim that psychological need satisfaction can serve as the mediator between a wide variety of personality and contextual variables and well-being.

STUDY 2

The first study was purely cross-sectional, and thus very limited inferences can be drawn concerning causality. Perhaps, rather than producing SWB, life balance is produced by SWB, or both are produced by unmeasured variables. Study 2 was a repeated measures study in which the covariations between life balance, need satisfaction, and SWB were tracked over 3 weeks. This allowed for a within-subject test of the between-subject patterns demonstrated in Study 1. Are participants happier, relative to their own baselines, during weeks when they are experiencing greater balance in their lives? This would suggest that balance can fluctuate from week to week, with concomitant effects on people's SWB. The within-subject design also further addresses the issue of whether balance effects are reducible to other basic personality traits, such as neuroticism. Presumably, such basic traits are stable and so should not directly covary with affective fluctuations. In other words, stable personality should cancel out in these analyses, with its effects being represented only within participants' mean SWB levels across the 3 weeks. We also examined whether fluctuating psychological need satisfaction would again mediate the balance effects, this time within a repeated measures design.

In Study 2 we also further validate the three life-balance measures by examining their associations with time stress. To do this we measure 11 hassles: time, money, ethnicity, gender, friendship, religiosity, work, appearance, travel, security, and parents. We expected that fluctuations in the balance measures would be associated primarily with time stress and not with the other forms of stress. Our logic was that there is no reason to expect that spending time in an unbalanced way should create stress regarding gender, ethnicity, appearance, and so on. To find that only time stress is affected by the balance measures would help validate our claim that the new measures specifically address optimal organization of one's time. In addition, not finding associations between balance and the other 10 sources of stress would further support our claim that the balance measures are not just proxies for neuroticism or trait negative affectivity.

Method

Participants and Procedure

Participants were 107 introductory psychology students, 35 men and 72 women, who took part to help fulfill a course requirement; there were 307 weekly observations in the final data set.[3] Each participant completed the

[3] Although a few participants had only two observations, we left them in because results were the same either way. Five participants were deleted from the analysis

same online survey three different times, 1 week apart. Each survey inquired about participants' SWB, need satisfaction, and life balance "in the last week" and also asked about their recent experience of various hassles.

Measures

SWB. To assess SWB we used five positive items from the PANAS (active, excited, interested, proud, and strong) and five negative items (distressed, ashamed, guilty, hostile, and upset). Participants were asked, "In the last week, to what extent have you felt . . .," with a scale ranging from 1 (*not at all*) to 5 (*extremely*). As in Study 1, the items formed a single factor and the negative items were subtracted from the positive items to derive a SWB score; this score was computed in all three surveys (alpha = .75).

Hassles. To assess hassles, each survey contained the Revised Undergraduate Student Hassles scale (RUSH; Pett & Johnson, 2005). Although this scale contains 57 items, we reduced it to 33 items, three per subscale, by taking the three highest-loading items for each subscale (Pett & Johnson, 2005). These subscales are time, money, ethnicity, gender, friendship, religiosity, work, appearance, travel, security, and parents. Participants read: "Below are some hassles that you may have experienced recently. Please indicate how much you have felt each hassle in the last week by choosing a number from the scale that best matches how you feel." A 1 (*not at all true*) to 5 (*very true*) scale was employed. Coefficient alpha for the time stress variable, of primary interest, was .89.

Life balance. In each survey, participants read "This is a question about how you spent your time during a typical weekday last week. In the table below there are 10 areas of life. You have 24 separate hours to allocate between these 10 areas. Please allocate these time units to represent how you actually spent your time, on a typical weekday." We chose the weekday unit because we assumed that workdays (in which time is constrained) provide a better indicator of optimal time use overall (especially since weekdays represent nearly three quarters of people's time), and we chose to assess the "typical" weekday because this was in keeping with Study 1's focus on "your average day." Afterward, participants completed the task a second time, thinking of their ideal time apportionment. The same 10 domains were supplied as in the U.S. sample employed within Study 1. At each time point, objective and subjective balance variables were computed in the same way as in Study 1.

---

because they did not complete the questionnaires correctly or gave nonsensical responses such as "0 hours" of sleep on the average day in the last week.

Need satisfaction. To assess need satisfaction we used the same 18 items employed in Study 1. These items were administered at each time of assessment and referred to the "past week" (alpha = .82).

Results

Preliminary Analyses

Table 3 contains descriptive statistics for the SWB measure, the need satisfaction measure, the time stress measure, the balance measures, and the actual and ideal hour measures. The actual and ideal hour means are presented only for illustrative purposes and are averaged across the 3 weeks since there were negligible time effects (i.e., sample mean differences across weeks). Notably, the means for the actual and ideal hour apportionments were very similar to those observed in Study 1's U.S. sample (see Table 1). Next, we used

Table 3
Study 2: Means and Standard Deviations, Averaged Across the 3 Weeks

	Mean	*SD*	*Mean*	*SD*
Likert measures				
SWB	1.02	1.24		
Need satisfaction	2.84	3.37		
Time stress	3.46	1.08		
Balance measures				
Objective balance	2.04	.47		
Subjective balance	7.55	4.15		
Time-use measures	Actual		Ideal	
Sleep	6.98	1.48	8.06	1.09
School	5.39	1.92	4.49	1.94
Work	.66	1.23	1.05	1.46
Chores	.90	.70	.60	.59
Recreation	2.76	1.60	2.17	1.15
Groups	1.32	1.53	1.41	1.10
Relationships	2.89	1.50	3.08	1.48
Commuting	.83	.70	.43	.62
Health	2.00	.98	2.00	1.02
Spirituality	.30	.89	.41	1.01

Table 4
Study 2: Associations Between Balance Measures, Need Satisfaction, and SWB

	Objective Balance	Subjective Balance	Need Satisfaction	SWB
Objective balance	1.0			
Subjective balance	.18*	1.0		
Need satisfaction	.04	.32*	1.0	
SWB	.11	.24*	.60*	1.0

Note. $^*p < .01$.

paired-sample t tests to compare the actual and ideal hours, using the averaged variables. These analyses revealed that participants would like to spend more time sleeping and in relationships and less time in school, doing chores, commuting, and, again curiously, in recreation (see Table 3). There were no differences for health time and group time, indicating that participants were content with their apportionments in these two domains.

We next considered zero-order correlations among the variables, for $N = 307$ weeks. As in Study 1, the "time spent in domain X" variables tended to be negatively correlated with one another, as would be expected, and are not tabled. Table 4 presents the correlations of SWB, need satisfaction, and the two balance measures; as can be seen, SWB and need satisfaction were again strongly positively correlated, and the two balance measures were also again positively correlated with one another. Subjective balance was significantly correlated with SWB and need satisfaction, but objective balance was not; however, recall that the true test of our hypothesis comes below, in regressions in which the set of domain time-use variables is controlled. As in Study 1, the "time spent" variables were largely uncorrelated with the subjective balance measure and tended to be negatively correlated with the objective balance measure, again with one exception; time spent in school was again strongly negatively associated with objective balance ($r = -.70$, $p < .01$), such that the more time spent in school, the less objective balance. However, as in Study 1, this association will be controlled in our hypotheses tests so that any balance effects are independent of the effects of time spent in school. Once again there were no gender differences, so gender is ignored below.

Hypothesis Tests

Our formal hypothesis tests focus on 307 surveys completed, each representing one week in a participant's life. We computed intraclass correlation coefficients (ICCs) for each primary variable to consider how much of the variation in the data was at level 2 (i.e., derived from the person level instead of the week level). The coefficients were large for need satisfaction and SWB (ICCs = .72 and .89, respectively), indicating that there is more person-level variance than week-level variance for these measures. ICC was considerably weaker but still substantial for subjective balance (ICC = .25) and rather small for objective balance (ICC = .04), indicating that more of the total variance in the balance measures is within subjects as compared to between subjects. To control for participant-level averages and thus to focus the analysis on fluctuations around that baseline over the three assessments of the study, we tested simple multilevel models using SAS proc mixed, specifying participant as the Level 2 variable and the measured variables as Level 1 variables. This approach makes person-weeks serve as the unit of analysis, rather than persons, and tests whether a particular week has more or less SWB compared to a person's other weeks, as a function of higher or lower levels of balance within that week.

SWB. First, we conducted an analysis predicting weekly SWB from the objective balance variable, as well as the same eight control variables employed in Study 1 (school, work, chores, recreation, relationships, health, commuting, and groups; again, sleep and spirituality were excluded). Objective balance was nearly significant (unstandardized $B = .46$, $p = .08$, two-tailed). We then repeated the analysis using subjective balance, finding that it was a significant predictor of SWB that week ($B = .04$, $p < .05$). In both analyses, time spent in relationships that week was the only actual hours variable that significantly predicted SWB at the end of that week (Bs = .23 and .18, respectively, both ps < .05). When the objective and subjective balance measures were both entered into an exploratory analysis, neither supplied significant independent variance beyond the other (ps = .23 and .13, respectively, although the two-variable set supplied significant variance upon entry [$p < .01$]). Supplementary analyses revealed that once again, there were no significant curvilinear or interactive effects involving the two primary balance measures (all ps > .25).

Time stress. We then followed the same procedure to predict time stress from the balance measures. In the objective balance analysis, objective balance was associated with less time stress ($B = -.49$, $p < .05$); time stress was also significantly negatively predicted by the amount of time spent in recreation and relationships. In the subjective balance analysis, the coefficient was not significant ($B = -.03$, $p = .14$), and none of the actual hours variables reached significance. Thus, it appears that feelings of time stress were associated more with objective imbalance than with subjective imbalance. What about the other 10 stress variables (money, ethnicity, gender, parents, etc.)? In 20 further analyses (10 stress variables regressed on two balance measures), the balance measure was significant in only one case. The general lack of effects in these analyses is consistent with our expectation that life balance would be associated primarily with perceptions of time stress, and not the other kinds of stress assessed by the RUSH scale. This also supports our supposition that imbalance represents more than mere negative affectivity or neuroticism as reflected in stress reports in general.

Mediational analyses. Finally, we examined whether need satisfaction again mediated the balance effects upon SWB, as expected based on the theorizing of Christiansen and Matuska (2006) and also the Study 1 results. To test this we again predicted SWB from each of the life-balance measures but this time included need satisfaction in the equation. In both analyses, need satisfaction was significant (both Bs $= .22$, $p < .01$). In the objective balance analysis the balance coefficient was reduced from .46 to .29, a nonsignificant reduction (Sobel's $z = 1.20$, $p < .25$). In the subjective balance analysis, the balance coefficient was reduced from .04 to .00, indicating complete mediation (Sobel's $z = 4.74$, $p < .01$). In sum, consistent with Study 1, the fluctuating subjective balance effects appear to be largely mediated by the associated experiences of autonomy, competence, and relatedness; however, contrary to Study 1, the fluctuating objective balance effects were not significantly mediated by fluctuating need satisfaction.

Brief Discussion

Study 2 found further support for the new life-balance measures, using a within-subjects or repeated measures design. Specifically, weekly fluctuations in balance were associated with weekly fluctuations in well-being. Of course, finding an association between fluctuating balance and SWB across a sample of weeks does not establish causality because changes in SWB could produce changes in balance, or there could be a third variable that accounts for their association. Still, Studies 1 and 2 test our hypotheses at two orthogonal levels of analysis (between subjects and within subjects, respectively), meaning that Study 2 provides a completely different kind of support for those hypotheses.

Study 2 also found further support for Christiansen and Matuska's (2006) supposition that life balance operates by allowing people to fulfill their psychological needs. Specifically, the subjective balance effects on SWB were mediated by associated variations in psychological need satisfaction. Finally, this study provided a different kind of validation for the objective life-balance measure by showing that objective balance was associated with reduced time stress but not with 10 other forms of stress. Why did subjective balance not predict reduced time stress? We suggest that the feeling of spending one's time in the way one prefers does not necessarily mitigate against time stress—time is a limited resource, and spending one's time as one chooses does not necessarily mean one's schedule is less busy. Why did need satisfaction not mediate the objective balance effects in Study 2 (although it did in Study 1)? We note that the mediation coefficient was still substantial ($z = 1.21$) but also note that something about within-subject processes may differ from the between-subject processes assessed in Study 1. We will revisit this issue in Study 4.

STUDY 3

There are several limitations to the time-use profile technique adopted in Studies 1 and 2. First, we prespecified the categories that participants would use, which may not accurately represent their own conception of how they spend their time. An idiographic methodology might be preferred so that participants could specify which time-use categories to employ. Second, we did not allow participants to consider their lives in a sequential fashion, moving through a day or typical day. Allowing a sequential approach may provide a more accurate picture of actual time use. Third, the Study 1 and 2 assessment technique examined sleep as a category. Because sleep is one of the largest areas in which people spend time but does not represent how people apportion their waking time, we excluded it from the earlier hypothesis tests; in Study 3 we excluded sleep by asking participants to focus only on their waking time. Fourth, the

Study 1 and 2 results concerned "your typical day" or "your typical day last week" rather than an actual specific day. Generalizability would be enhanced if the effects are found for SWB upon a particular day under consideration, not just typical days.

Thus, in Study 3 we employed the Day Reconstruction Method (DRM; Kahneman, Krueger, Schkade, Schwarz, & Stone, 2004). The DRM was designed to reduce recall biases and provides an ecologically valid time-budget assessment tool, one shown to be just as accurate as experience-sampling methodologies when it concerns the previous day (as in the current research). Important for our purposes, the DRM allows participants to generate their own categories and to list them in sequence, starting from their moment of waking. Also, the DRM does not include sleep as a category. So that we could assess subjective balance, we augmented the measure to ask participants to list their ideal time spent in each of the categories they specified, as well as their actual time spent.

In Study 3 we also improve our assessment of neuroticism, using the 12-item NEO-PI scale (Costa & McCrae, 1989) rather than the 2-item TIPI scale. This allows us to again examine whether the balance effects are reducible to neuroticism effects.

Method

Participants and Procedure

Participants were 146 introductory psychology students at the University of Missouri, 40 men and 106 women, who took part to satisfy a course requirement. They were linked to an online questionnaire in which they first completed a neuroticism scale, rated their SWB and need satisfaction on the previous day, and then reconstructed that day using the DRM.

Measures

DRM. We used the instructions of Kahneman et al. (2004). Participants first read "Think of your waking day as a continuous series of scenes or episodes in a film, and write down each episode that occurred yesterday, in the blank spaces below. It will probably help to start when you woke up yesterday. Give each episode a brief name that will help you remember it (for example, 'commuting to work,' or 'at lunch with B' . . .). There is no minimum or maximum limit on how many episodes to identify—just type in the number of episodes that make sense to you." After typing, participants read "Write down approximately how long each episode lasted (in minutes). The episodes people identify usually last between 15 minutes and 2 hours. Indications of the end of an episode might be going to a different location, ending one activity and starting another, or a change in the people you are interacting with.'' After identifying episodes and the time spent during them, participants read ''Write down how long you would have liked each episode to last, ideally. For example, you might wish your 60 minutes commuting had been only 15 minutes, or your 60 minutes shopping had been 120 minutes.'' Each event was listed and assessed prior to moving on to the next event. The survey program asked all participants to generate at least five episodes, and 54 participants stopped at five. Other participants listed more episodes, with a maximum of 14.

Examination of the mean duration of each episode revealed decreasing time spent within each episode subsequent to the first five events listed, with sequentially increasing positive skew within these later categories (ranging from 3.5 steadily up to 7.5 for the 14th event). This finding seems to be due to some participants taking a more fine-grained approach than others, listing more events; as the less fine-grained participants dropped out of later events, the mean event length decreased and the positive skew increased. Because of these distributional problems and also to enhance between-subject comparability, we focused only on the first five episodes, listed by all 146 participants. Objective and subjective balance measures were computed in the same way as the first two studies. We note that between-subject differences in the overall amount of time that went into these two measures are handled in our hypothesis tests by the set of five event-time control variables.

SWB, need satisfaction, and neuroticism. SWB and need satisfaction were measured in the same way as in Studies 1 and 2, using the 18-item need satisfaction measure (alpha = .86) and the PANAS (alpha = .89, after recoding the negative affect items). All items were administered with respect to ''yesterday,'' corresponding to the focus of the DRM assessment. The 12-item neuroticism scale of the NEO-PI (Costa and McCrae, 1989) was employed, with no particular time-scale reference (alpha = .82). This allowed neurtcism to be assessed at the trait level, whereas SWB was assessed at more of a state level.

Results

Preliminary Analyses

Table 5 provides descriptive statistics for the primary study measures, including the first five episodes listed. We first considered zero-order correlations among the variables. The five ''time spent in

Table 5
Study 3: Means and Standard Deviations

	Mean	*SD*
Likert measures		
SWB	2.56	3.02
Need satisfaction	2.70	3.01
Neuroticism	2.66	.71
Balance measures		
Objective balance	71.84	50.95
Subjective balance	210.63	199.60
Time-use measures (in minutes)		
First event listed	61.47	63.62
Second event listed	97.07	85.56
Third event listed	92.74	76.29
Fourth event listed	110.26	110.93
Fifth event listed	106.60	105.22

domain X" variables tended to be uncorrelated with one another, rather than negatively correlated as in Studies 1 and 2, likely because the DRM event methodology is not ipsative. Table 6 presents the correlations of SWB, need satisfaction, and the two balance measures; as can be seen, SWB and need satisfaction were again correlated, as were the two balance measures. Also as in Study 2, subjective balance was significantly associated with SWB and marginally associated with need satisfaction, but objective balance

Table 6
Study 3: Correlations Between DRM Balance Measures, Need Satisfaction, and SWB

	Subjective Balance	Objective Balance	Need Satisfaction	SWB
Subjective balance	1.0			
Objective balance	.25*	1.0		
Need satisfaction	.11	.14	1.0	
SWB	.09	.22*	.76*	1.0

Note. *$p < .01$.

was not correlated with SWB (again, however, the true test comes in the regression analyses below). The five "time spent" variables showed varied correlations with the two subjective balance measures, correlations that are uninterpretable because the five variables come from varying ideographically generated events, not prespecified categories (thus, the negative association between time spent in school and objective balance, found in Studies 1 and 2, could not again be examined). Once again, men and women did not differ on the balance, SWB, or need satisfaction measures, so gender is ignored below.

Hypothesis Tests

To test the hypothesis that the two balance measures would each be associated with SWB, we conducted two different regression analyses in which SWB was predicted by either objective balance or subjective balance, controlling for the five variables representing the actual time spent in each of the first five categories.

In the first analysis, subjective balance was significantly associated with SWB ($\beta = .25$, $p < .01$) and none of the five (specific time) control variables was significant. In the second analysis, objective balance was also significant ($\beta = .32$, $p < .05$); again, none of the control variables was significant. When both the life-balance measures were included in the same exploratory equation, both the subjective and the objective balance measures were significant (βs = .23 and .29, ps < .01 and .05, respectively), suggesting that as measured via the DRM methodology, the two balance measures have significant independent effects. Supplementary analyses revealed no significant curvilinear effects of any balance measure upon SWB. Thus, a more balanced apportionment of time did not become less beneficial at the high end of the distribution, nor did it become more beneficial at the low end of the distribution. Furthermore, there were no significant interactions between the objective and subjective balance measures. Thus, participants did not evidence synergistically higher SWB when they reported both an equitable time distribution *and* a nondiscrepant actual/ideal time distribution.

Controlling for Neuroticism

Preliminary analyses indicated that neuroticism was not associated with objective balance ($\beta = .09$, *ns*), indicating that neuroticism cannot account for this variable's effects. However, neuroticism was associated with subjective balance ($\beta = -.23$, $p < .01$) and was also associated with SWB ($\beta = -.52, p < .01$). Thus we repeated the subjective balance regression above, controlling for neuroticism. The subjective balance measure's effect was reduced from .25 to .11 ($p = .13$), and Sobel's test indicated that the reduction was significant ($z = 2.79$, $p < .01$), indicating that neuroticism could account for a significant amount of the subjective balance effect in Study 3.

Mediation by Need Satisfaction

Next, we examined whether psychological need satisfaction might mediate the balance-to-SWB relationships. As in the prior studies, we entered the need satisfaction variable at a second step of the two analyses in which SWB was regressed upon one of the two balance measures and also the five control variables. The subjective balance effect was reduced from $\beta = .25$ to $\beta = .14$, $p < .05$, and the objective balance effect was reduced from $\beta = .32$ to $\beta = .13$, *ns*. Sobel's test indicated significant mediation in both cases (zs = 1.98 and 1.96, respectively, ps = .048 and .05, respectively).

Brief Discussion

Study 3 replicated the most important findings of the earlier studies, using a different method of time-use assessment, the Day Reconstruction Method. Again, the DRM focuses on the sequence of episodes on a particular day (yesterday), allowing participants to ideographically establish the names and number of categories. The replication of the findings using this new measure supports our assumption that the objective and subjective balance measures represent emergent properties of participants' total life systems, properties that might be approached via various different time-use assessment methodologies. Once again, the life-balance measure effects on daily SWB were significantly mediated by the psychological need satisfaction experienced on that day. Objective balance effects were independent of neuroticism, whereas subjective balance effects were partially accounted for by neuroticism.

STUDY 4

In Study 4 we endeavored to find another kind of support for our approach, via a month-long longitudinal study of change in balance and well-being. During the study we specifically asked all participants to strive for the goal of greater balance in their lives. Thus, we were able to examine (a) whether rated attainment of this goal is associated with measured positive changes in balance during the study and (b) whether positive changes in balance during the study are associated with positive changes in well-being. This would provide the strongest causal evidence yet regarding the importance of life balance, while also suggesting that striving for greater balance is a feasible and effective strategy for happiness enhancement. In Study 4 we also again tested the mediating effects of psychological need satisfaction. Do changes in life balance affect well-being because of the changes in need satisfaction that they produce?

Method

Participants and Procedure

Study 4 participants were also employed as participants in Study 1's U.S. sample. Study 1 reported the Time 1 data for this sample, collected before participants encountered the goal-assignment procedure (described below). After being asked to pursue the balance goal, participants were assessed again, 1 month later, regarding their goal attainment and their well-being. All assessments occurred online. In the initial sample, 150 of the 196 participants followed through to complete the second assessment. Attrition analyses revealed that the 46 participants who did not complete the study did not differ from those who did on any of the Time 1 variables, including well-being, need satisfaction, the two balance measures, and the various actual hours variables.

Measures

SWB. To assess well-being we used the same approach as before, by focusing on the difference between positive and negative affect. The PANAS (Watson et al., 1988) was employed at both time periods.

Life balance. To assess life balance we used the same actual and ideal hour-apportionment approach as in Study 1, except that at Time 2 we asked participants to consider the "average day in the last week" rather than "the average day."

Need satisfaction. To assess psychological need satisfaction we used the same 18 items employed in Studies 1 and 2, administered at Time 2 with respect to "the last week."

Goal assignment. Toward the end of the Time 1 questionnaire, participants read the following:

> This study is about what leads to changes in people's mood, happiness, and well-being. To study this question, we need you to pursue a particular goal during the next four weeks! Of course, you don't have to, but research shows that setting and achieving personal goals has positive effects in people's lives. Why not give it a try? During the follow-up survey, we will ask you how things went with this goal. Your goal, should you choose to accept it, is: Re-arrange your time and routine so they are closer to your ideal 24-hour configuration. A big problem for modern students (and all adults) is keeping their lives in balance. Research shows that those who can balance their lives get a big benefit, in health, well-being, and personal accomplishment. You have already told us what your ideal 24-hour configuration is. During the next four weeks, please do whatever you can to move towards this ideal. Type some thoughts about how you can do this, in the box below. Please make a serious effort to think about this!

Example plans typed by participants include "I need to focus in class so I can reduce my time studying things I've already been over. I want to make the most of my time with friends and school, so I need to shorten my time doing idol [*sic*] things like talking on the phone or getting dressed in the morning" and "I will prioritize better and make sure that things that need to get done first are the things that I do first."

Participants next read "Are you willing to pursue this goal over the next four weeks? It is OK if you are not, we just need to know." Of the 196 initial participants, 183 said yes and 13 said no. Participants who responded no then read "Even though you said 'no,' we ask you to remain open—you may find yourself thinking about or working on the goal anyway." Ten of the 12 "no" participants completed the follow-up survey, and these participants indeed reported less balance goal attainment than the remainder of the sample. However, because results were the same with or without these 10 participants, we elected to include them in the final longitudinal sample.

Goal attainment. In the second survey, 1 month after the first survey, participants were reminded of the assigned balance goal and asked to rate their attainment of that goal via three items: "During the last 4 weeks, how much did you actually think about the goal?" "During the last

4 weeks, how much actual effort did you put into the goal?" and "During the last 4 weeks, how much actual progress did you make towards the goal?" A 1 (*not at all*) to 5 (*very much*) scale was supplied for all three questions, and the three responses were averaged to obtain a "balance goal attainment" variable (alpha = .87).

Results

Preliminary Analyses

Table 7 contains Time 1 and Time 2 descriptive statistics for the SWB measure, the need satisfaction measure, the two life-balance measures, the goal-attainment measure, and the eight actual hour measures (the ideal hour measures were excluded from this table, for economy's sake and because they are less central). We examined the intercorrelation of the two balance measures, finding an r of .19 at Time 1 and an r of .21 at Time 2 (both ps < .05), again suggesting that they somewhat converge upon an underlying state of balance. We

Table 7
Study 4: Means and Standard Deviations, at Time 1 and Time 2

	Time 1		Time 2	
	Mean	*SD*	*Mean*	*SD*
Likert measures				
SWB	3.54	2.83	2.75	2.74
Need satisfaction	2.46	2.94	2.51	2.98
Balance measures				
Objective balance	2.55	.45	2.50	.45
Subjective balance	8.34	5.19	7.36	5.56
Actual time-use measures				
Sleep	7.03	1.43	6.98	1.44
School	5.45	1.88	5.17	1.64
Chores	.95	.77	1.05	.93
Recreation	2.49	1.41	2.60	1.57
Groups	1.21	1.41	1.28	1.46
Relationships	2.83	1.63	2.77	1.63
Commuting	.87	.64	.91	.67
Health	1.91	.85	1.85	.90

Table 8
Study 4: Correlations Between T2–T1 Difference Score Measures of Balance, Need Satisfaction, and SWB

	Subjective Balance	Objective Balance	Need Satisfaction	SWB
	Difference	Difference	Difference	Difference
Subjective bal difference	1.0			
Objective bal difference	.27**	1.0		
Need satisfaction difference	.29**	.19*	1.0	
SWB difference	.22*	.12	.58**	1.0

Note. $^*p < .05$; $^{**}p < .01$.

also examined the 4-week test-retest coefficients for the two balance measures, finding an *r* of .46 for the objective balance measure and an *r* of .55 for the subjective balance measure. These findings suggest that the measures have reasonable stability, but also evidence room for change over a month-long interval. Table 8 contains zero-order correlations between four difference scores that represent change in objective balance, change in subjective balance, change in need satisfaction, and change in SWB, to parallel Tables 2, 4, and 6. As can be seen, increases in need satisfaction were associated with increases in SWB, and increases in objective balance were associated with increases in subjective balance; increases in subjective balance were associated with increases in need satisfaction and SWB, and increases in objective balance was associated with increases in need satisfaction but not SWB. Again, however, formal hypothesis tests with the control variables are presented below.

We also conducted paired-sample pre- and post-*t* tests on each pair of balance variables, discovering that participants on average reported more subjective balance at the end of the study ($t(150) = 2.37$, $p < .02$), which is noteworthy given that all participants were asked to pursue greater balance in their lives. No other differences were significant, except that time spent in school declined marginally significantly ($t(150) = 1.75$, $p < .08$). Notably, there was a gender difference on Time 2 subjective balance ($t(149) = 2.10$, $p < .05$), and thus gender is controlled in the hypothesis tests.

Hypothesis Tests

Our first hypothesis was that balance goal attainment would predict changes in life balance, our second hypothesis was that changes in life balance would predict changes in well-being, and our third hypothesis was that need satisfaction would mediate the latter effects. To test these hypotheses we conducted simultaneous regression analyses. In the first set of analyses, we conducted two regressions in which Time 2 objective or subjective balance was regressed upon the corresponding Time 1 balance measure and the goal attainment measure (to focus the analysis on change in balance), along with the 16 Time 1 and Time 2 time-use control variables (again excluding sleep and spiritual time). As hypothesized, balance goal attainment significantly predicted change in balance in both cases (for objective balance, $\beta = .11$, $p < .03$; for subjective balance, $\beta = .17$, $p < .01$). Thus, participants who reported achieving the balance goal during the month-long study also evidenced greater life balance at the end of the study, according to both balance measures. This is noteworthy because of the indirect nature of the balance measures and participants' likely unawareness of how these measures are conceptualized and computed, helping to rule out mere positivity or demand effects.

In the second set of analyses, we regressed the SWB difference score (see Table 8) on the Time 1 and Time 2 balance variables and the sets of Time 1 and Time 2 actual time-use variables. Change in subjective balance was a significant predictor of change in well-being ($\beta = .30$, $p < .01$), and change in objective balance was also a significant predictor of change in well-being ($\beta = .34$, $p < .05$). Thus, participants who achieved either greater subjective or greater objective life balance during the month-long study also tended to report more positive (relative to negative) mood at the end of the study. An exploratory analysis entering both balance constructs simultaneously found a significant effect for subjective balance ($\beta = .26$, $p < .05$) but not for objective balance ($\beta = .20$, $p = .26$), suggesting that, as in Study 1, subjective balance supplies more unique variance in predicting SWB. Supplementary analyses revealed that once again, there were no significant curvilinear or interactive effects involving the two balance measures.

In the third set of analyses, we repeated the second set of analyses, inserting Time 1 and Time 2 psychological need satisfaction at a final step of the regressions, to perhaps account for the balance effects. Time 2 psychological need satisfaction was highly significant and positive in both analyses, again indicating that increased need satisfaction predicts increased SWB. In the subjective balance analysis the coefficient for the subjective balance measure was reduced from .30 to .08 with the Time 1 and Time 2 need satisfaction variables in the equation. A Sobel test of mediation revealed that change in need satisfaction significantly mediated the change in subjective balance to change in SWB effect ($z = 8.37$, $p < .01$). In the objective balance analysis the coefficient was reduced from .34 to .22, not a significant reduction according to the Sobel test ($z = 1.18$, *ns*). Thus, as in Study 2's analysis of within-subject change, change in need satisfaction did not significantly mediate the effects of change of objective balance on change in SWB.

Discussion

Study 4 again found support for the hypotheses, this time in a longitudinal study of change over a 1-month period. Specifically, ratings of having achieved the goal of balancing one's life predicted positive changes in our measures of both objective and subjective balance. Although this may seem obvious, it actually helps to validate both the goal progress measure and the life-balance measures, since at Time 2 participants were unlikely to remember their Time 1 time-use allocations and since they did not know how balance measures would be computed from either the Time 1 or the Time 2 time allocations. Change in both balance measures also predicted change in SWB, and the subjective balance effect was mediated by change in need satisfaction. Notably, change in need satisfaction did not mediate the effect of change in objective balance upon change in SWB, suggesting that increasing the equitability of one's time use may affect SWB by as yet undiscovered mechanisms.

In sum, Study 4 adduced a different type of evidence for the potential causal effects of balance upon SWB, and for the premise that people can successfully strive in their lives to achieve greater balance. However, a limitation of Study 4 is that there was no control group assigned to pursue some other goal (e.g., "better organize my things"). It is possible that participants in such a condition who achieved this goal would also report enhanced well-being. Still, it seems less likely that success in "organizing my things" would predict enhanced balance in the use of time.

GENERAL DISCUSSION

Although most people have an intuitive sense of what a balanced life is, the notion has proven quite difficult to pin down in the research literature. How can the concept be defined and measured in a way that is commensurate with the theoretical weight that has been placed upon it, from ancient times to the present? Work-life balance and work-family balance researchers have focused primarily on conflicts between work and the rest of life, typically measured via Likert ratings of positive versus negative feelings about these two aspects of life. Unfortunately, such measures fail to consider the totality of people's lives and may also fall prey to the "no new information" problem, in which balance may be reducible to neuroticism, stress, or other known constructs. Other researchers have defined and measured balance primarily in terms of desirable outcomes presumed to be associated with balance. Unfortunately, such measures may fall prey to the circularity problem, in which balance and its products are indistinguishable.

In this article we introduced a conceptual and measurement approach to the life-balance concept that is novel yet consistent with past approaches. It addresses the entirety of people's lives and does not fall prey to either of the two problems. Our assessment approach does not require participants' direct judgments about the balance or positivity of their lives but rather derives measures of balance indirectly via quantitative analyses of participants' separate actual and ideal time profiles. Furthermore, the assessment approach provides measures that can predict lower time stress, higher need satisfaction, and even dynamic fluctuations in SWB over time.

To summarize the results: Study 1 examined cross-sectional data in the United States and India. It demonstrated concurrent associations between both the subjective and the objective balance measures and SWB, in both samples. These findings were noteworthy not only for supporting the conceptualization we have advanced but also for showing that the expected associations generalize to non-Western as well as Western samples. Although this seems expected given that life balance has been deemed a vital issue by thinkers in both Eastern and Western traditions (e.g., Confucius, Aristotle), it is important to actually demonstrate such generalizability. Also, the balance effects persisted when the actual amount of time spent in multiple individual life domains (e.g., work, socializing, recreation) was controlled. This supports our supposition that the measures reflect emergent system-level properties of people's lives and lifestyles, which go beyond the particular contents or domains that make up the measures. Furthermore, the study showed that the life-balance effects on SWB are largely mediated by psychological need satisfaction. Consistent with the theorizing of Christiansen and Matuska (2006), leading a more balanced life does appear to help people meet important psychological needs, with resultant SWB benefits. Finally, Study 1 showed that neither balance measure's effects were reducible to the effects of neuroticism.

Study 2 replicated most of these findings in a repeated measures study of within-subject fluctuations in balance, need satisfaction, and SWB. When participants' lives became more balanced from one week to the next, their satisfaction and happiness also improved, relative to their own baselines. Study 2 again demonstrated that these effects are mediated by psychological need satisfaction. In addition, Study 2 showed that fluctuations in objective balance were associated with fluctuations in time stress but not with other forms of stress, helping to validate underlying assumptions of the measurement approach. A further strength of Study 2 was its demonstration of the effects at an orthogonal within-subjects level of analysis.

Study 3 replicated the major effects again, this time using a different type of time-use profile based on the Day Reconstruction Method (Kahneman et al., 2004). This was significant because it shows that the balance effects emerge for an idiographic and sequential methodology, not just a nomothetic and categorical methodology—that is, the effects are not contingent on the particular way in which time use is assessed. Once again, effects were mediated by psychological need satisfaction. In Study 3, the objective balance measure's effects were again independent of neuroticism, but unlike in Study 1, the subjective balance measure's effects were partially accounted for by neuroticism. This may reflect the better measurement of neuroticism in Study 3.

Study 4 adduced yet another type of support for our hypotheses, showing that changes in both types of life balance over a 1-month period predict changes in SWB during that period. These effects were again mediated by need satisfaction (here, changes in need satisfaction). This longitudinal design provides the strongest evidence for the possible causal effects of balance on SWB. Study 4 also showed that attaining the assigned goal of improving one's life balance indeed predicted positive changes in both balance measures, indicating that it is both feasible and worthwhile to try to reorganize the ways in which one spends one's time.

We now consider some broader issues, limitations, and needed research directions. The first issue to be raised is that the positive correlation of SWB with the objective balance measure (which is based on more equitable apportionment of time across categories) carries an interesting implication—that the most balanced person spends exactly equal time in each of the listed categories, resulting in a standard deviation of 0. While such a score would certainly indicate excessive rigidity, it is notable that there were no curvilinear effects of the balanced time-use variable upon SWB. Thus, extremely high or low scores on the measure did not differentially influence SWB. In practice, no participants had a standard deviation of less than 1.3 hours in Studies 1, 2, and 4, or 12 minutes in Study 3; if we had found participants in the samples who approached a score of 0 on objective balance, we might have found such a curvilinear effect. Although we believe that our standard deviation approach is the most straightforward approach to assessing the equitable distribution of time across multiple life categories, other algorithms could be explored.

As another example of alternative interpretations of our balance measures, the subjective balance measure may primarily assess a form of contentment with one's time-use profile (despite that contentment and satisfaction were not directly rated). But if one is content with a very unbalanced time-use profile (as measured by the "objective" standard deviation measure), can one truly be balanced? We included this measure because it takes into account people's subjective evaluations of their profile, which most balance researchers believe is important to acknowledge (Backman, 2004; Christiansen & Matuska, 2006). Time-use profiles differ, and surely the optimal balance for a person must reflect in part his or her own feelings regarding his or her time-use profile. Notably, in all studies, the subjective and objective balance measures were significantly positively associated. Thus, perhaps in most cases, objectively equitable time use converges with subjective feelings of actual/ideal balance.

It is also important to realize that our "subjective" balance measure involves much more than merely rating how satisfied or content one is with one's time use; instead, it involves thoughtfully reconsidering how one would ideally apportion the 24 hours of one's day, given the opportunity. We suggest that this exercise itself may have important practical or therapeutic benefits.

Several study limitations should be acknowledged, beyond a few weak or inconsistent effects. First, none of the four studies assessed time use in vivo; instead, they used retrospective reports regarding the previous day or the typical day. Thus, they could potentially be inaccurate. Notably, however, Kahneman et al. (2004) provided evidence that previous DRMs are highly correlated with data collected in real time, and they suggested that the DRM provides an efficient, valid, and noninvasive way of assessing actual time use. Second, none of the four studies established a certain causal linkage between balance and SWB; future research could attempt to experimentally manipulate participants' days in different ways to better establish this link (although ethical issues might become problematic in such research). Still, Study 4 showed that achieving greater balance over a month-long period predicted longitudinal change in SWB, providing somewhat stronger causal data. Third, only college student samples were employed; balance may operate differently or have different effects in adult samples, an issue that needs attention. Other limitations include the fact that other Big Five traits besides neuroticism (e.g., conscientiousness) could also be examined as alternative disposition-level explanations of the balance effects. Also, the balance assessment technique used in Studies 1, 2, and 4 (see the appendix) always asked participants to list their actual time use first, before asking about ideal time use. It is possible that undetected order effects affect the results, although we believe it is necessary to first consider one's actual pattern of time use before one can realistically consider one's ideal pattern. Still, future research could try the reverse order. Future research could also examine other types of discrepancies in assessing subjective balance (i.e., actual/undesired or actual/ought, rather than actual/ideal) to see which type is most impactful. However, we believe that actual/ideal discrepancies best represent the issue of whether one's actual time-use profile meets with one's own approval. Finally, future research could test for other positive mediators of the balance effects, beyond psychological need satisfaction. Perhaps greater objective balance provides people with greater buffering against stress because when things go poorly in one domain, they have more alternative domains to turn to (Linville, 1985). One way to test this might be to compare balance on weekdays to balance on weekends; perhaps those who restore better balance on their two days off are better off as a result.

Conclusion

We conclude that the concept of life balance is meaningful and represents something beyond the known constructs such as neuroticism, stress, and satisfaction. Life balance is a real property of lives that is measurable by considering people's overall pattern of time use and also by considering how much that pattern converges with their ideal pattern. Balance effects represent more than the effects of time use within particular domains (i.e., the amount of time one spends working, sleeping, or recreating), suggesting that they are true emergent properties of people's life systems and lifestyles as a whole. We hope other researchers will build upon and extend these results.

REFERENCES

Adams, G. A., King, L. A., & King, D. W. (1996). Relationship of job and family involvement, family social support, and work-family conflict with job and life satisfaction. *Journal of Applied Psychology*, **81**, 411–420.

Backman, C. L. (2001). Occupational balance: Measuring time use and satisfaction across occupational performance areas. In M. Law, C. Baum, & W. Dunn (Eds.), *Measuring occupational performance: Supporting best practice in occupational therapy* (pp. 203–213). Thorofare, NJ: Slack.

Backman, C. L. (2004). Occupational balance: Exploring the relationships among daily occupations and their influence on well-being. *Canadian Review of Occupational Therapy*, **71**, 202–209.

Chapman, N. J., Ingersoll-Dayton, B., & Neal, M. B. (1994). Balancing the multiple roles of work and caregiving for children, adults, and elders. In G. W. Keita & J. J. Hurrell (Eds.), *Job stress in a changing workforce: Investigating gender, diversity, and family issues* (pp. 283–300). Washington, DC: American Psychological Association.

Christiansen, C. H., & Matuska, K. M. (2006). Lifestyle balance: A review of concepts and research. *Journal of Occupational Sciences*, **13**, 49–61.

Costa, P. T., Jr., & McCrae, R. R. (1989). *NEO–PI/FFI manual supplement*. Odessa, FL: Psychological Assessment Resources.

Csikszentmihalyi, M. (1988). The flow experience and its significance for human psychology. In M. Csikszentmihalyi & I. Csikszentmihalyi (Eds.), *Optimal* *experience: Psychological studies of flow in consciousness* (pp. 15–35). New York: Cambridge University Press.

Cummins, R. A. (2005). Instruments assessing quality of life. In J. Hogg & A. Langa (Eds.), *Assessing adults with intellectual disabilities: A service provider's guide* (pp. 119–137). Malden, MA: Blackwell.

Deci, E. L., & Ryan, R. M. (2000). The "what" and "why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, **11** (4), 227–268.

Deci, E. L., Ryan, R. M., Gagné, M., Leone, D. R., Usunov, J., & Kornazheva, B. P. (2001). Need satisfaction, motivation, and well-being in the work organizations of a former Eastern Bloc country. *Personality and Social Psychology Bulletin*, **27**, 930–942.

Diener, E. (1994). Assessing subjective well-being: Progress and opportunities. *Social Indicators Research*, **31**, 103–157.

Fortunato, V. J., & Goldblatt, A. M. (2002). Construct validation of revised Strain-Free Negative Affectivity Scale. *Educational and Psychological Measurement*, **62**, 45–63.

Gosling, S. D., Rentfrow, P. J., & Swann, W. B., Jr. (2003). A very brief measure of the Big-Five personality domains. *Journal of Research in Personality*, **37**, 504–528.

Grant-Vallone, E. J., & Donaldson, S. I. (2001). Consequences of work-family conflict on employee well-being over time. *Work and Stress*, **15**, 214–226.

Greenhaus, J. H., & Powell, G. N. (2006). When work and family are allies: A theory of work family enrichment. *Academy of Management Review*, **31**, 72–92.

Jacobs, J. A., & Gerson, K. (2001). Overworked individuals or overworked families? Explaining trends in work, leisure, and family time. *Work and Occupations*, **28**, 40–63.

Kahneman, D., Krueger, A. B., Schkade, D. A., Schwarz, N., & Stone, A. A. (2004). A survey method for characterizing daily life experience: The Day Reconstruction Method. *Science*, **306** (5702), 1776–1780.

Law, M., Polatajko, H., Baptiste, S., & Townsend, E. (1997). Core concepts of occupational therapy. In Canadian Association of Occupational Therapists (Ed.), *Enabling occupation: An occupational theory perspective* (pp. 29–56). Ottawa, ON, Canada: CAOT Publication ACE.

Linville, P. W. (1985). Self-complexity and affective extremity: Don't put all of your eggs in one cognitive basket. *Social Cognition*, **3**, 94–120.

Nurit, W., & Michal, A. B. (2003). Rest: A qualitative exploration of the phenomenon. *Occupational Therapy International*, **10**, 227–238.

Pett, M. A., & Johnson, M. J. (2005). Development and validation of the Revised University Student Hassles scale. *Educational and Psychological Measurement*, **65**, 984–1010.

Sheldon, K. M. (2004). *Optimal human being: An integrated multi-level perspective*. Mahwah, NJ: Erlbaum.

Sheldon, K. M., & Elliot, A. J. (1999). Goal striving, need-satisfaction, and longitudinal well-being: The self-concordance model. *Journal of Personality and Social Psychology*, **76**, 482–497.

Sheldon, K. M., Elliot, A. J., Kim, Y., & Kasser, T. (2001). What is satisfying about satisfying events? Testing 10 candidate psychological needs. *Journal of Personality and Social Psychology*, **80** (2), 325–339.

Sheldon, K. M., & Gunz, A. (2009). Psychological needs as basic motives, not just experiential requirements. *Journal of Personality*, **77**, 1467–1492.

Sobel, M. E. (1982). Asymptotic intervals for indirect effects in structural equations models. In S. Leinhart (Ed.), *Sociological methodology 1982* (pp. 290–312). San Francisco: Jossey-Bass.

Spencer, E. A. (1989). Toward a balance of work and play: Promotion of health and wellness. *Occupational Therapy in Health Care*, **5**, 87–99.

Staats, A. W. (1999). Unifying psychology requires new infrastructure, theory, method, and a research agenda. *Review of General Psychology*, **3**, 3–13.

Tenbrunsel, A. E., Brett, J. M., Maoz, E., Stroh, L. K., & Reilly, A. H. (1995). Dynamic and static work-family relationships. *Organizational Behavior and Human Decision Processes*, **63**, 233–246.

Triandis, H. (1995). *Individualism and collectivism*. Boulder, CO: Westview Press.

Warren, T. (2004). Working part-time: Achieving a successful "work-life" balance? *British Journal of Sociology*, **55**, 99–122.

Watson, D., Tellegen, A., & Clark, L. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology*, **54**, 1063–1070.

APPENDIX: BALANCE ASSESSMENT SHEET USED IN STUDY 1

This is a question about how you spend your time each day on average. In the table below there are 10 areas of life. You have 24 separate hours to allocate between these 10 areas.

Please allocate these time units to represent approximately

(a) how you actually spend your time, on average
(b) how you would like to spend your time

I allocate (approximately) my 24 hours in activities that concern my—

Area of your life	How you actually spend your time		How you would like to spend your time
Sleeping (time in bed)		If you allocate no time to any area, just leave it blank.	
School (time spent studying and in class)			
Paid work (time spent at work)			
Household chores (time spent cooking, cleaning, buying food, mending, etc.)			
Community (time with groups, clubs, volunteering)			
Recreation (time with sports, TV, computer, music, etc.)			
Commuting (time spent getting to and from work or school)			
Personal relationships (time with friends, partner, family)			
Health and self-maintenance (time spent exercising, eating, washing, etc.)			
Spirituality or religion (time spent in meditation or spiritual/religious duties)			
OTHER (please add)			
Total of the time units	24		24

This document is a scanned copy of a printed document. No warranty is given about the accuracy of the copy. Users should refer to the original published version of the material.